

Appl. No.: 09/819,947

• Amendment Dated: 3/27/01

• Reply to OA of 9/21/2004

**AMENDMENT TO THE CLAIMS**

The listing of the claims will replace all prior versions and listings of claims in the application:

**LISTING OF CLAIMS**

Please amend the claims as follows:

- 1 1. (Original) A method for wirelessly transmitting data between a plurality of
- 2 subscriber units and a base transceiver station, the method comprising:
- 3 at least one subscriber unit transmitting a request to send data blocks to the base
- 4 transceiver station, the request including a data transmission queue size value;
- 5 updating at the base transceiver station, a base user queue size estimate that
- 6 corresponds to the one subscriber unit that transmitted the request to send data, the base
- 7 user queue size estimate being based upon the data transmission queue size value;
- 8 the base transceiver station generating a schedule that includes time slots and
- 9 frequency blocks in which the requested data blocks are to be transmitted from the one
- 10 subscriber unit to the base transceiver station;
- 11 the at least one subscriber unit transmitting the data blocks the at least one
- 12 subscriber unit requested to send according to the schedule, each transmitted data block
- 13 comprising encoded information representing a current data transmission queue size
- 14 value;

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15 updating the base user queue size estimate based upon the encoded information;  
16 and  
17 the base user queue size estimate influencing future schedules generated by the  
18 base transceiver station.

1 2. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 1, wherein:  
3 the request to send data is transmitted during a contention slot indicated within a  
4 schedule previously transmitted by the base transceiver station.

1 3. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 1, wherein:  
3 the data blocks comprise at least portion of a data unit, and each data unit  
4 comprises encoded information representing the current data transmission queue  
5 size value.

1 4. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 3, wherein the number of  
3 data units within each data block is dependent on a transmission mode.

1 5. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 3, wherein encoded  
3 information comprises:

4 encoding the information within a plurality of bits within headers of the  
5 data units.

1 6. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 4, wherein encoding the  
3 information comprises:

4 calculating a number of data blocks to be transmitted, the number of data  
5 blocks being dependent upon the transmission mode and the current data  
6 transmission queue value.

1 7. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 6, wherein the number of  
3 data blocks is encoded within a plurality of bits within headers of the data units.

1 8. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 7, wherein a range of data  
3 blocks is encoded with the plurality of bits of headers of the data units.

1 9. Please withdraw claim 9 from examination, without prejudice.

1 10. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 6, wherein the generated  
3 schedule includes a finite number of time slots that in combination form a frame,  
4 and the transmission mode can change from frame to frame.

1 11. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 1, wherein updating the  
3 base user queue size estimate comprises:  
4 decoding received data blocks to determine the current data transmission  
5 queue value.

1 12. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 1, wherein updating the  
3 base user queue size estimate comprises:  
4 decoding received data units to determine the current data transmission  
5 queue value, each data block comprising at least a portion of one of the data units .

1 13. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 12, wherein decoding  
3 received data units comprises:  
4 receiving a number that represents a number of data blocks to be  
5 transferred.

1 14. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 12, wherein decoding  
3 received data units comprises:  
4 receiving a range of data blocks;  
5 determining the current data transmission queue depending upon the  
6 received range and an up-link transmission mode.

1 15. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 14, wherein the range is  
3 decoded from a plurality of bits located within headers of the data units.

1 16. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 14, wherein determining the  
3 current data transmission queue comprises:  
4 estimating a level of up-link traffic;

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5                   determining the current data transmission queue based upon the range and  
6                   the level of the up-link traffic.

1   17.   (Original)   The method for wirelessly transmitting data between a plurality of  
2                   subscriber units and a base transceiver station of claim 1, wherein the scheduling  
3                   includes generating a map, the map depicting time slots and frequency blocks that  
4                   are designated for the transmission of information between the base transceiver  
5                   station and the one subscriber unit, the scheduling being influenced by the base  
6                   user queue size value.

1   18.   (Original)   The method for wirelessly transmitting data between a plurality of  
2                   subscriber units and a base transceiver station of claim 17, wherein the map  
3                   includes down link transmission from the base transceiver station to the one  
4                   subscriber unit, and up link transmission from the one subscriber unit to the base  
5                   transceiver station.

1   19.   (Original)   The method for wirelessly transmitting data between a plurality of  
2                   subscriber units and a base transceiver station of claim 17, wherein the map is  
3                   transmitted to the plurality of subscriber units once per frame of time.

1 20. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 17, wherein the map  
3 includes time slots and frequency blocks for down link transmission from the base  
4 transceiver station to each of the plurality of subscriber units, and time slots and  
5 frequency blocks for up link transmission from each of the plurality of subscriber  
6 units to the base transceiver station.

1 21. (Original) A method for wirelessly transmitting data between a transmitter and  
2 a receiver, the method comprising:  
3 updating at the receiver, a receiver user queue size estimate that corresponds to the  
4 transmitter that transmitted a request to send data blocks, the receiver user queue size  
5 estimate being based upon a data transmission queue size value of the transmitter;  
6 the transmitter generating a schedule that includes time slots and frequency blocks  
7 in which the requested data blocks are to be transmitted from the transmitter to the  
8 receiver;  
9 the transmitter transmitting the data blocks the transmitter requested to send  
10 according to the schedule, each transmitted data block comprising encoded information  
11 representing a current data transmission queue size value;  
12 updating the receiver user queue size estimate based upon the encoded  
13 information; and

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14 the receiver user queue size estimate influencing future schedules generated by the  
15 transmitter.

1 22. (Original) The method for wirelessly transmitting data between a transmitter  
2 and a receiver, of claim 21, wherein:  
3 the data blocks comprise at least portion of a data unit, and each data unit  
4 comprises encoded information representing the current data transmission queue  
5 value.

1 23. (Original) The method for wirelessly transmitting data between a transmitter  
2 and a receiver, of claim 22, wherein the number of data units within each data  
3 block is dependent on a transmission mode.

1 24. (Original) The method for wirelessly transmitting data between a transmitter  
2 and a receiver, of claim 21, wherein encoded information comprises:  
3 encoding the information within a plurality of bits within headers of the  
4 data units.

1 25. (Original) The method for wirelessly transmitting data between a transmitter  
2 and a receiver, of claim 22, wherein encoding the information comprises:



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3 calculating a number of data blocks to be transmitted, the number of data  
4 blocks being dependent upon the transmission mode and the current data  
5 transmission queue value.

1 26. (Original) The method for wirelessly transmitting data between a transmitter  
2 and a receiver, of claim 24, wherein a range of data blocks is encoded with the  
3 plurality of bits of the headers of the data units.

1 27. (Original) The method for wirelessly transmitting data between a transmitter  
2 and a receiver, of claim 21, wherein updating the base user queue size estimate  
3 comprises:  
4 decoding received data units to determine the current data transmission  
5 queue value, each data block comprising at least a portion of one of the data units .

1 28. (Original) The method for wirelessly transmitting data between a transmitter  
2 and a receiver, of claim 27, wherein decoding received data units comprises:  
3 receiving a range of data blocks;  
4 determining the current data transmission queue depending upon the  
5 received range and an up-link transmission mode.

1 29. (Original) The method for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station of claim 28, wherein determining the  
3 current data transmission queue comprises:  
4 estimating a level of up-link traffic;  
5 determining the current data transmission queue based upon the range and the level of the  
6 up-link traffic.

1 30. (Original) A method for wirelessly receiving information from a transmit unit,  
2 the method comprising:  
3 receiving a request to send data blocks from the transmit unit, the request  
4 including a data transmission queue size;  
5 updating a user queue size based upon the data transmission queue size;  
6 generating a schedule that includes time slots and frequency blocks in  
7 which the requested data blocks are to be transmitted;  
8 receiving the requested data blocks according to the schedule, each transmitted  
9 data block comprising encoded information representing a current data transmission queue  
10 value;  
11 updating the user queue size estimate based upon the encoded information; and  
12 the user queue size estimate influencing the generation of the next schedule.

1 31. (Original) The method for wirelessly receiving information from a transmit  
2 unit of claim 30, wherein updating the base user queue size estimate comprises:  
3 decoding received data units to determine the current data transmission  
4 queue value, each data block comprising at least a portion of one of the data units.

1 32. (Original) The method for wirelessly receiving information from a transmit  
2 unit of claim 31, wherein decoding received data units comprises:  
3 receiving a range of data blocks;  
4 determining the current data transmission queue depending upon the  
5 received range and an up-link transmission mode.

1 33. (Original) The method for wirelessly receiving information from a transmit  
2 unit of claim 32, wherein determining the current data transmission queue  
3 comprises:  
4 estimating a level of up-link traffic;  
5 determining the current data transmission queue based upon the range and  
6 the level of the up-link traffic.

1 34. (Original) A method for wirelessly transmitting information from a transmit  
2 unit, the method comprising:

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3 the transmit unit transmitting a request to send data blocks to a receiver unit, the  
4 request including a data transmission queue size value;  
5 receiving a schedule in which the data blocks are to be transmitted;  
6 the transmit unit transmitting the requested data blocks according to the schedule,  
7 each transmitted data block comprising encoded information representing a current data  
8 transmission queue value; wherein  
9 the current data transmission queue value influences the next schedule generated  
10 by the base transceiver station.

1 35. (Original) The method for wirelessly transmitting information from a transmit  
2 unit of claim 34, wherein the request to send data is transmitted during a  
3 contention slot indicated within a schedule previously transmitted by the base  
4 transceiver station.

1 36. (Original) The method for wirelessly transmitting information from a transmit  
2 unit of claim 34, wherein the data blocks comprise at least portion of a data unit,  
3 and each data unit comprises encoded information representing the current data  
4 transmission queue size value.

1 37. (Original) The method for wirelessly transmitting information from a transmit  
2 unit of claim 36, wherein the number of data units within each data block is  
3 dependent on a transmission mode.

1 38. (Original) The method for wirelessly transmitting information from a transmit  
2 unit of claim 37, wherein encoding the information comprises:  
3 calculating a number of data blocks to be transmitted, the number of data  
4 blocks being dependent upon the transmission mode and the current data  
5 transmission queue value.

1 39. (Original) The method for wirelessly transmitting information from a transmit  
2 unit of claim 38, wherein the number of data blocks is encoded within a plurality  
3 of bits within headers of the data units.

1 40. (Original) The method for wirelessly transmitting information from a transmit  
2 unit of claim 39, wherein a range of data blocks is encoded with the plurality of  
3 bits of headers of the data units.

1 41. (Original) A system for wirelessly transmitting data between a plurality of  
2 subscriber units and a base transceiver station, the system comprising:

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3           at least one subscriber unit transmitting a request to send data blocks to the base  
4 transceiver station, the request including a data transmission queue size value;  
5           means for updating at the base transceiver station, a base user queue size estimate  
6 that corresponds to the one subscriber unit that transmitted the request to send data, the  
7 base user queue size estimate being based upon the data transmission queue size value;  
8           means for generating a schedule that includes time slots and frequency blocks in  
9 which the requested data blocks are to be transmitted from the one subscriber unit to the  
10 base transceiver station;  
11          the one subscriber unit transmitting the data blocks the one subscriber unit  
12 requested to send according to the schedule, each transmitted data block comprising  
13 encoded information representing a current data transmission queue size value;  
14          means for updating the base user queue size estimate based upon the encoded  
15 information; wherein  
16          the base user queue size estimate influencing future schedules generated by the  
17 base transceiver station.